

**REMARKS**

In the Office Action, claims 10-15, 20-24, 30-33, and 41-44 were withdrawn. The Declaration was objected to. Drawings were objected to due to certain informalities. Claims 3-5 were rejected under 35 U.S.C. § 112, second paragraph. Claims 1-5, 16, 25-26, and 34-37 were rejected under 35 U.S.C. § 102(b) as being anticipated by Turnquist et al., (U.S. Patent application 20020192074, hereinafter “Turnquist”). By the present Response, claims 3-5 are amended, and corrections are made to the specification and drawings. Upon entry of the amendments, claims 1-44 will be pending in the present application, with claims 1-9, 16-19, 25-29 and 34-40 under examination.

Reconsideration and allowance of all pending claims are requested.

**Defective Oath/Declaration**

In the Office Action, the Declaration was objected to because it does not use the words “material to patentability” as defined in 37 C.F.R. 1.56. In a letter published by Jon W. Dudas, dated January 22, 2008, all oaths or declarations filed prior to June 1, 2008 will have this strict requirement waived. The present patent application was filed on March 30, 2004. Applicants request the Examiner to waive the need for filing a new Declaration in compliance with 37 C.F.R. 1.67(a) based upon Under Secretary Dudas’ communication.

**Objection to the Drawings**

The drawings were objected to because the numerals at the ends of the broken lines in FIG. 4 and FIG. 6 (1-1, 2-2) do not correspond to the view numbers of the sectional view (FIG. 5 and FIG. 7). FIG. 4 is amended to obviate the objections raised in the Office Action. Specifically, line 1-1 has been removed from FIG. 4. Also paragraph 16 of specification of the patent application is amended as mentioned above.

However Applicants differ with the Examiner's view of FIGS. 6 and 7.

Applicants wish to point out that line 2-2 shown in FIG. 6 corresponds to the sectional view illustrated in FIG. 7.

In the Office Action, FIG. 9 was objected to because the wave spring was identified with numeral "66" instead of "70", and also numeral "74" has not mentioned within the specification. FIG. 9 is amended to obviate the objections raised in the Office Action. Specifically, the numeral "66" has been changed to "70". Paragraph 34 of the specification of the patent application has been amended as mentioned above.

Review and acceptance of the replacement drawings are requested.

#### **Rejections Under 35 U.S.C. § 112**

The Examiner rejected claims 3-5 under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regard as the invention. Applicants hereby amend claims 3-5 as set forth herein. Specifically, the term "hard" is removed from the claims 3-5. In view of these amendments, Applicants respectfully request withdrawal of the foregoing rejections under 35 U.S.C. § 112, second paragraph.

#### **Rejections Under 35 U.S.C. § 102**

In the Office Action, the Examiner rejected claims 1-5, 16, 25-26, and 34-37 under 35 U.S.C. § 102(b) as anticipated by Turnquist. Applicants respectfully traverse this rejection.

**Independent claims 1, 16, 25, and 34 and claims depending therefrom**

Independent claim 1 recites, *inter alia*, “*a substantially wear-resistant surface disposed as the tip of the seal assembly, the substantially wear-resistant surface being positioned physically proximate to tips of the plurality of blades*”.

Independent claim 16 recites, *inter alia*, “*engaging a substantially wear-resistant surface against a tip of the rotating element*”.

Independent claim 25 recites, *inter alia*, “*a substantially wear-resistant surface positioned physically proximate to the blade tips*”.

Independent claim 34 recites, *inter alia*, “*the seal assembly comprising a substantially wear-resistant surface positioned proximate to the rotating inner ring*”.

With reference to the present patent application, the compliant seal assembly 20 broadly comprises *a hard-coated seal surface 36*, and a biasing member 38. *The hard-coated seal tip surface 36 is closely positioned to the tip of the blade 16*. The clearance between the blade tip and hard coating is set based on the engine clearance transient profile. *The surface 36 is generally made of a hard ceramic material*, such as aluminum oxide (Al<sub>2</sub>O<sub>3</sub>), or a hard metallic or cermet coating (Triballoy-cobalt based, WC-CoCr, Cr carbide-NiCr) which is substantially resistant to wear caused by rubbing of the tip of the blade 16 against it, at least during a thermal transient period (i.e., during a period of dissimilar thermal growth between the rotating and the static components). See patent application, page 6, paragraph 24, FIG. 2.

Turnquist does not teach or suggest at least the foregoing features recited in the independent claims. Turnquist discloses a turbine seal having a plurality of arcuate seal carrier segments that have *an abradable portion secured to the seal carrier segments*.  
*See* Turnquist, Abstract. Turnquist specifically discloses:

*An abradable seal 130, generally designated 130, disposed between rotating turbine bucket 110 and stationary turbine housing 120, comprises an arcuate seal carrier segment 140 disposed adjacent to turbine bucket 110 separating pressure regions on axially opposite sides of arcuate seal carrier segment 140. Arcuate seal carrier segment 140 includes an abradable portion 150 radially disposed on seal carrier segment first surface 190.*

Turnquist, page 1, paragraph 12, FIG. 1 (emphasis added).

It is clearly evident from the foregoing passage and FIG. 1 that the seal of Turnquist includes an *abradable portion* disposed on seal carrier segment. In contrast, the present patent application discloses “a wear-resistant surface disposed as the tip of the seal assembly”. In other words, tip of the seal assembly is wear resistant. An *abradable* portion, as in Turnquist certainly does not qualify as a “wear-resistant surface.”

For at least these reasons, Turnquist cannot anticipate independent claims 1, 16, 25 and 34, or their dependent claims.

**Conclusion**

In view of the remarks and amendments set forth above, Applicants respectfully request allowance of the pending claims. If the Examiner believes that a telephonic interview will help speed this application toward issuance, the Examiner is invited to contact the undersigned at the telephone number listed below.

Respectfully submitted,

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